```
/* `time' utility to display resource usage of processes.
   Copyright (C) 1990, 91, 92, 93, 96 Free Software Foundation, Inc.

   This program is free software; you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation; either version 2, or (at your option)
   any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program; if not, write to the Free Software
   Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA
   02111-1307, USA.  */

/* Originally written by David Keppel <pardo@cs.washington.edu>.
   Heavily modified by David MacKenzie <djm@gnu.ai.mit.edu>.
   Heavily modified for busybox by Erik Andersen <andersen@codepoet.org>
   */

#include <stdlib.h>
#include <stdio.h>
#include <signal.h>
#include <errno.h>
#include <getopt.h>
#include <string.h>
#include <limits.h>
#include <unistd.h>
#include <sys/time.h>
#include <sys/types.h>            /* For pid_t. */
#include <sys/wait.h>
#include <sys/param.h>            /* For getpagesize, maybe.  */

#define TV_MSEC tv_usec / 1000
#include <sys/resource.h>
#include "busybox.h"

/* Information on the resources used by a child process.  */
typedef struct
{
  int waitstatus;
  struct rusage ru;
  struct timeval start, elapsed; /* Wallclock time of process.  */
} resource_t;

/* msec = milliseconds = 1/1,000 (1*10e-3) second.
   usec = microseconds = 1/1,000,000 (1*10e-6) second.  */

#ifndef TICKS_PER_SEC
#define TICKS_PER_SEC 100
#endif

/* The number of milliseconds in one `tick' used by the `rusage' structure.  */
#define MSEC_PER_TICK (1000 / TICKS_PER_SEC)

/* Return the number of clock ticks that occur in M milliseconds.  */
#define MSEC_TO_TICKS(m) ((m) / MSEC_PER_TICK)

#define UL unsigned long
```

```
/* vi: set sw=4 ts=4: */
/*
 * Mini insmod implementation for busybox
 *
 * This version of insmod supports x86, ARM, SH3/4, powerpc, m68k,
 * and MIPS.
 *
 *
 * Copyright (C) 1999,2000 by Lineo, inc. and Erik Andersen
 * Copyright (C) 1999-2002 Erik Andersen <andersee@debian.org>
 * Written by Erik Andersen and Ron Alder <alder@lineo.com>
 *
 * Modified by Bryan Rittmeyer <bryan@ixiacom.com> to support SH4
 * and (theoretically) SH3. I have only tested SH4 in little endian mode.
 *
 * Modified by Alcove, Julien Gaulmin <julien.gaulmin@alcove.fr> and
 * Nicolas Ferre <nicolas.ferre@alcove.fr> to support ARM7TDMI.  Only
 * very minor changes required to also work with StrongArm and presumably
 * all ARM based systems.
 *
 * Magnus Damm <damm@opensource.se> added PowerPC support 20-Feb-2001.
 *   PowerPC specific code stolen from modutils-2.3.16,
 *   written by Paul Mackerras, Copyright 1996, 1997 Linux International.
 *   I've only tested the code on mpc8xx platforms in big-endian mode.
 *   Did some cleanup and added BB_USE_xxx_ENTRIES...
 *
 * Quinn Jensen <jensenq@lineo.com> added MIPS support 23-Feb-2001.
 *   based on modutils-2.4.2
 *   MIPS specific support for Elf loading and relocation.
 *   Copyright 1996, 1997 Linux International.
 *   Contributed by Ralf Baechle <ralf@gnu.ai.mit.edu>
 *
 * Based almost entirely on the Linux modutils-2.3.11 implementation.
 *   Copyright 1996, 1997 Linux International.
 *   New implementation contributed by Richard Henderson <rth@tamu.edu>
 *   Based on original work by Bjorn Ekwall <bj0rn@blox.se>
 *   Restructured (and partly rewritten) by:
 *   Bjorn Ekwall <bj0rn@blox.se> February 1999
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License as published by
 * the Free Software Foundation; either version 2 of the License, or
 * (at your option) any later version.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
 * General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program; if not, write to the Free Software
 * Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
 *
 */

#include <stdlib.h>
#include <stdio.h>
#include <stddef.h>
#include <errno.h>
#include <unistd.h>
#include <dirent.h>
#include <ctype.h>
#include <assert.h>
```

```
#include <string.h>
#include <getopt.h>
#include <sys/utsname.h>
#include "busybox.h"

#ifdef BB_FEATURE_NEW_MODULE_INTERFACE
# undef BB_FEATURE_OLD_MODULE_INTERFACE
# define new_sys_init_module      init_module
#else
# define old_sys_init_module      init_module
#endif

#ifdef BB_FEATURE_INSMOD_LOADINKMEM
#define LOADBITS 0
#else
#define LOADBITS 1
#endif

#if defined(__powerpc__)
#define BB_USE_PLT_ENTRIES
#define BB_PLT_ENTRY_SIZE 16
#endif

#if defined(__arm__)
#define BB_USE_PLT_ENTRIES
#define BB_PLT_ENTRY_SIZE 8
#define BB_USE_GOT_ENTRIES
#define BB_GOT_ENTRY_SIZE 8
#endif

#if defined(__sh__)
#define BB_USE_GOT_ENTRIES
#define BB_GOT_ENTRY_SIZE 4
#endif

#if defined(__i386__)
#define BB_USE_GOT_ENTRIES
#define BB_GOT_ENTRY_SIZE 4
#endif

#if defined(__mips__)
// neither used
#endif

//-------------------------------------------------------------------------------
//---------modutils module.h, lines 45-242
//-------------------------------------------------------------------------------

/* Definitions for the Linux module syscall interface.
   Copyright 1996, 1997 Linux International.

   Contributed by Richard Henderson <rth@tamu.edu>

   This file is part of the Linux modutils.

   This program is free software; you can redistribute it and/or modify it
   under the terms of the GNU General Public License as published by the
   Free Software Foundation; either version 2 of the License, or (at your
   option) any later version.

   This program is distributed in the hope that it will be useful, but
   WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
```

```
#endif /* module.h */

//---------------------------------------------------------------------------
//----------end of modutils module.h
//---------------------------------------------------------------------------


//---------------------------------------------------------------------------
//----------modutils obj.h, lines 253-462
//---------------------------------------------------------------------------

/* Elf object file loading and relocation routines.
   Copyright 1996, 1997 Linux International.

   Contributed by Richard Henderson <rth@tamu.edu>

   This file is part of the Linux modutils.

   This program is free software; you can redistribute it and/or modify it
   under the terms of the GNU General Public License as published by the
   Free Software Foundation; either version 2 of the License, or (at your
   option) any later version.

   This program is distributed in the hope that it will be useful, but
   WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
   General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program; if not, write to the Free Software Foundation,
   Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.  */


#ifndef MODUTILS_OBJ_H
static const int MODUTILS_OBJ_H = 1;

/* The relocatable object is manipulated using elfin types.  */

#include <stdio.h>
#include <elf.h>
#include <endian.h>

#if __BYTE_ORDER == __LITTLE_ENDIAN
#define ELFDATAM    ELFDATA2LSB
#elif __BYTE_ORDER == __BIG_ENDIAN
#define ELFDATAM    ELFDATA2MSB
#endif


/* Machine-specific elf macros for i386 et al.  */

/* the SH changes have only been tested on the SH4 in =little endian= mode */
/* I'm not sure about big endian, so let's warn: */

#if (defined(__SH4__) || defined(__SH3__)) && defined(__BIG_ENDIAN__)
#error insmod.c may require changes for use on big endian SH4/SH3
#endif

/* it may or may not work on the SH1/SH2... So let's error on those
   also */
#if (defined(__sh__) && (!(defined(__SH3__) || defined(__SH4__))))
#error insmod.c may require changes for non-SH3/SH4 use
```